

Title (en)

VEHICLE, ELECTRIC DEVICE, AND POWER TRANSMISSION/RECEPTION SYSTEM

Title (de)

FAHRZEUG, ELEKTRISCHE VORRICHTUNG UND LEISTUNGSÜBERTRAGUNGS-/EMPFANGSSYSTEM

Title (fr)

VÉHICULE, DISPOSITIF ÉLECTRIQUE ET SYSTÈME DE TRANSMISSION/RÉCEPTION D'ÉNERGIE

Publication

EP 2716488 A4 20150923 (EN)

Application

EP 11866540 A 20110603

Priority

JP 2011062817 W 20110603

Abstract (en)

[origin: EP2716488A1] A vehicle includes: a power reception device (110) that receives power for running the vehicle (100) in a non-contact manner using electromagnetic field resonance; and a power transmission device (184) that transmits power supplied to an electric device inside the vehicle in a non-contact manner using the electromagnetic field resonance. A frequency of an electromagnetic field used by the power reception device to receive power is set to be different from a frequency of an electromagnetic field used by the power transmission device to transmit power. It is desirable to set the frequency of the electromagnetic field used by the power reception device to receive power and the frequency of the electromagnetic field used by the power transmission device to transmit power such that the frequency of the electromagnetic field used by the power reception device to receive power is lower than the frequency of the electromagnetic field used by the power transmission device to transmit power. It is even more desirable for the power received by the power reception device in a non-contact manner from an external power transmission device provided outside the vehicle to be larger than the power transmitted by the power transmission device to the electric device in a non-contact manner.

IPC 8 full level

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CPC (source: EP KR US)

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Citation (search report)

- [A] JP 2009296780 A 20091217 - KOJIMA PRESS KOGYO KK
- [AD] JP 2007104868 A 20070419 - TOYOTA MOTOR CORP
- [A] WO 2010131349 A1 20101118 - TOYOTA MOTOR CO LTD [JP], et al
- [A] WO 2011024285 A1 20110303 - TOYOTA MOTOR CO LTD [JP], et al
- [L] EP 2716489 A1 20140409 - TOYOTA MOTOR CO LTD [JP]
- [A] EP 2306617 A1 20110406 - SONY CORP [JP]
- [I] DAVID GLUCKMAN: "GM Partners with Powermat to Offer Wireless Charging in Chevy Volt, Other Cars", 8 January 2011 (2011-01-08), Car and Driver Blog, XP055206041, Retrieved from the Internet <URL:https://web.archive.org/web/20110108131656/http://blog.caranddriver.com/gm-partners-with-powermat-to-offer-wireless-device-charging-in-chevy-volt-other-cars/> [retrieved on 20150803]
- [AO] 14th Shanghai International Automobile Industry Exhibition (Auto Shanghai 2011) & "'Innovation for Tomorrow'", 7 December 2010 (2010-12-07), XP055206374, Retrieved from the Internet <URL:http://2011.autoshanghai.org/En/content.aspx?id=163&ident=ZHXWEN> [retrieved on 20150805] & WIRELESS POWER CONSORTIUM: "LEADING CHINESE CAR MAKERS DISPLAY QI WIRELESS CHARGING AT SHANGHAI AUTO SHOW", 26 September 2011 (2011-09-26), http://www.wirelesspowerconsortium.com/news/, XP055205911, Retrieved from the Internet <URL:http://www.wirelesspowerconsortium.com/data/downloadables/6/7/0/wpc_pr13_final_31may11_english.pdf> [retrieved on 20150803]
- [A] WIRELESS POWER CONSORTIUM: "System Description Wireless Power Transfer, Volume I: Low Power, Part 1: Interface Definition, Version 1.0.1", 8 September 2010 (2010-09-08), Wireless Power Consortium Blog, XP055206225, Retrieved from the Internet <URL:https://web.archive.org/web/20100908115904/http://www.wirelesspowerconsortium.com/blog/2010/08/31/qi-specification-available-for-download/> [retrieved on 20150804] & WIRELESS POWER CONSORTIUM: "System Description Wireless Power Transfer, Volume I: Low Power, Part 1: Interface Definition, Version 1.1.2", 30 June 2013 (2013-06-30), http://www.wirelesspowerconsortium.com/downloads/wireless-power-specification-part-1.html, XP055206490, Retrieved from the Internet <URL:http://www.wirelesspowerconsortium.com/downloads/wireless-power-specification-part-1.html> [retrieved on 20150805]
- See references of WO 2012164743A1

Cited by

EP2716489A4; WO2018172005A1; US9381878B2; WO2019166542A1

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DOCDB simple family (application)

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